

REMARKS

Claims 1, 2, and 4-12 remain pending, and claims 1 and 4 are currently amended. Claim 3 is canceled, and no claims are added via the present amendment. Claims 7-12 are withdrawn from consideration.

Claims 1-6 stand rejected under 35 U.S.C. § 103(a) as obvious over Rubin et al., U.S. Patent No. 4,733,246, in view of Dane, U.S. Patent No. 4,743,095. Applicants respectfully traverse this rejection.

Claim 1 describes an ultra-lightweight electromagnetic wave concentrator that has a thin-film curved body and a reflective surface, and the claim specifies that:

a reinforcing groove structure is formed at least in the peripheral zone of said reflective surface to increase the rigidity of said thin-film curved body.

Claims 2-6 depend from claim 1, so they also describe this feature. Accordingly, to justify the rejection, the asserted prior art must teach or suggest a “reinforcing groove structure” as claimed.

The rejection relies on Rubin et al. as the primary prior art reference to teach some of the claim features, but, as acknowledged in the Office Action (page 2, bottom), Rubin et al. does not teach a reinforcing groove structure as claimed. Rubin et al. uses support *ribs* instead to provide a rigid structure. (Note recesses 26 in support structure mold 22 shown in Fig. 2, which provide support ribs 27. Column 2, line 54.)

Therefore, to justify the obviousness rejection, a valid teaching or suggestion must motivate one skilled in the art to modify the Rubin et al. apparatus to have a reinforcing groove structure as claimed. The Rubin et al. apparatus would need to have the reinforcing groove structure either in addition to or in place of the support ribs.

To support the holding of obviousness, the rejection relies on Dane upon to motivate one of ordinary skill in the art “to include” a reinforcing groove structure. (The Office Action does not indicate whether the grooves would replace the ribs.) The Office Action (see page 3, top) indicates that element 35 of Dane is “grooved/channel,” and it cites column 2, lines 54-67, for support.

However, the cited text of Dane does *not* indicate that the reinforcing structure is grooved. Note, for example, lines 62-63 of column 2, which state that reference number 35 denotes “a plurality of reflector member support *rings*” (emphasis added). Figs. 4 and 6 clearly show that support rings 35 are distinct elements from reflector members 40 as opposed to grooves recessed within reflector member 40.

Thus, applicants must respectfully disagree with the statement in the Office Action that Dane teaches supporting a reflector with a structure that is grooved. Because Dane does not disclose a reinforcing groove structure, the reference does not motivate one skilled in the art to modify the Rubin et al. apparatus to have a reinforcing groove structure as claimed.

Applicants acknowledge the statement in the Office Action (page 3) that adding a reinforcing groove structure is cost efficient and known in the prior art. However, the Office Action provides no prior art documentation that such structure is either cost efficient or known. (Even if such documentation were identified, an Office Action would still need to explain why one skilled in the art would want to modify the apparatus of Rubin et al. That is, the Office Action would need to explain why the modified Rubin et al. apparatus would be *more* cost efficient than the unmodified apparatus and also how the grooves provided that increased efficiency.)

Applicants also acknowledge that Rubin and Dane (and even Withoos, cited in an earlier Office Action) disclose reinforcing a reflector with a reinforcing rib structure. However, applicants feature an invention such that a reinforcing *groove* structure is formed at least in the peripheral zone of the reflective surface, and the reinforcing groove structure is molded in the reflective surface to increase the rigidity of the thin-film curved body. That is, the reinforcing groove structure is molded in the reflective surface and not in the backside of the reflective surface. In other words, the reflective surface in itself is a reinforcing structure. On the contrary, in Rubin, Dane, and Withoos, the reinforcing ribs structure is formed in the backside of the reflective surface to support the reflective surface, and the reflective surface itself is not a reinforcing structure. Applicants' invention is both ultra-light *and* rigid and can solve the problem in the prior art in which the weight of the reflector increases when a reinforcing structure is added to the reflector. In these respects, applicants' invention differs significantly from the technologies of Rubin, Dane, and Withoos, and one skilled in the art would not have used those technologies as a basis for deriving applicants' invention. Thus, the cited prior art cannot render the claims obvious.

For at least these reasons, applicants request the withdrawal of the obviousness rejection.

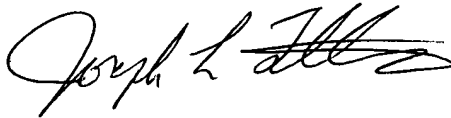
Applicants further submit that the application is in condition for allowance. Accordingly, a Notice of Allowability is hereby requested. If for any reason it is believed that this application is not now in condition for allowance, the Examiner is invited to contact applicants' undersigned attorney at the telephone number indicated below to arrange for disposition of this case.

Amendment Under 37 C.F.R. § 1.111
Serial No. 10/635,641
Attorney Docket No. 030943

In the event that this paper is not timely filed, applicants petition for an appropriate extension of time. The fees for such an extension, or any other fees which may be due, may be charged to Deposit Account No. 50-2866.

Respectfully submitted,

WESTERMAN, HATTORI, DANIELS & ADRIAN, LLP

A handwritten signature in black ink, appearing to read "Joseph L. Felber", with a stylized flourish at the end.

Joseph L. Felber
Attorney for Applicants
Reg. No. 48,109

1250 Connecticut Avenue, N.W., Suite 700
Washington, DC 20036
Tel: (202) 822-1100
Fax: (202) 822-1111

JLF/af
Q:\2003\030943\030943 response to 11-19-04 action.doc